

## Recovery Plan Action Status

**Plan Name:** Final Recovery Plan for the Kaua'i Cave Arthropods: the Kaua'i Cave Wolf Spider (*Adelocosa Anops*) and the Kaua'i Cave Amphipod (*Spelaeorchestia Koloana*)

**Plan Status:** Final

**Plan Date:** 19-Jul-06

**Lead Agency:** USFWS

**Lead Office:** Pacific Islands Fish And Wildlife Office

(808)

(792-9400 )

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Kauai cave wolf or pe'e pe'e maka 'ole spider ( <i>Adelocosa anops</i> ), Kauai cave amphipod ( <i>Spelaeorchestia koloana</i> )	1	1.1	Protect the cave from unauthorized human entry.	Ongoing Current	FY 1995 - FY 1999		Private landowners, Pacific Islands Fish and Wildlife Office, USFWS	Research	Contract, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	
Kauai cave wolf or pe'e pe'e maka 'ole spider ( <i>Adelocosa anops</i> ), Kauai cave amphipod ( <i>Spelaeorchestia koloana</i> )	1	1.2	Protect/enhance plant communities over caves, subterranean cracks, and mesocaverns.	Ongoing Current	FY 1995 - FY 1999		Private landowners, Natural Resource Conservation Service, Pacific Islands Fish and Wildlife Office, USFWS	Research: Habitat Requirements, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	
Kauai cave wolf or pe'e pe'e maka 'ole spider ( <i>Adelocosa anops</i> ), Kauai cave amphipod ( <i>Spelaeorchestia koloana</i> )	1	1.3	Prevent new introductions of non-native predators and competitors an carry out management actions that eliminate or reduce the presence of non-native predators and competitors.	Ongoing Current	FY 1995 - FY 1999		Hawaii Department of Land and Natural Resources, Pacific Islands Fish and Wildlife Office, USFWS	Management: Predator and Competitor Control, Research: Competition, Research: Predation	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	
Kauai cave wolf or pe'e pe'e maka 'ole spider ( <i>Adelocosa anops</i> ), Kauai cave amphipod ( <i>Spelaeorchestia koloana</i> )	1	1.4	Prevent new introductions of bio-control organisms and bio-pesticides throughout the State of Hawaii.	Not Started			Hawaii Department of Land and Natural Resources, Pacific Islands Fish and Wildlife Office, USFWS	Other: Information and Education, Other: Law Enforcement, Other: Regulations	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	

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Kauai cave wolf or pe'e pe'e maka 'ole spider (Adelocosa anops), Kauai cave amphipod (Spelaeorchestia koloana)	1	1.5	Prevent contamination of the cave from human-associated activities such as runoff and soil percolation of pollutants or other harmful chemicals including harmful pesticides.	Ongoing Current	FY 1995 - FY 1999		Hawaii Department of Land and Natural Resources, Private landowners, Pacific Islands Fish and Wildlife Office, USFWS	Management: Habitat Maintenance and Manipulation, Management: Land Use, Other: Information and Education, Other: Law Enforcement, Other: Regulations, Research: Environmental Contaminants, Research: Habitat Status, Research: Management Techniques	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	
Kauai cave wolf or pe'e pe'e maka 'ole spider (Adelocosa anops), Kauai cave amphipod (Spelaeorchestia koloana)	2	2.1	Plant and maintain surface vegetation that will provide root systems for herbivorous and detritivorous cave dwellers with an abundant and sustainable food resource.	Ongoing Current	FY 1995 - FY 1999		Private landowners, Pacific Islands Fish and Wildlife Office, USFWS	Management: Habitat Maintenance and Manipulation, Research: Habitat Requirements, Research: Habitat Status, Research: Other Information	Contract, Graduate Student, Internal Administrative, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	
Kauai cave wolf or pe'e pe'e maka 'ole spider (Adelocosa anops), Kauai cave amphipod (Spelaeorchestia koloana)	1	2.2	Maintain consistent high humidity within the Dark Zone and increase relative humidity within Stagnant Air Zones.	Ongoing Current	FY 1995 - FY 1999		Private landowners, Pacific Islands Fish and Wildlife Office, USFWS	Management: Habitat Maintenance and Manipulation, Research: Habitat Requirements, Research: Habitat Status, Research: Other Information	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	
Kauai cave wolf or pe'e pe'e maka 'ole spider (Adelocosa anops), Kauai cave amphipod (Spelaeorchestia koloana)	1	3.1	Continue biannual or more frequent monitoring to determine population trends in caves and assess recovery actions.	Ongoing Current	FY 1995 - FY 1999		Private landowners, Pacific Islands Fish and Wildlife Office, USFWS	Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	
Kauai cave wolf or pe'e pe'e maka 'ole spider (Adelocosa anops), Kauai cave amphipod (Spelaeorchestia koloana)	1	3.2	Evaluate research and monitoring results and implement adaptive management as necessary.	Ongoing Current	FY 2006		Private landowners, Pacific Islands Fish and Wildlife Office, USFWS	Management: General, Research: General, Research: Management Techniques	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	

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Kauai cave wolf or pe'e pe'e maka 'ole spider (Adelocosa anops), Kauai cave amphipod (Spelaeorchestia koloana)	3	3.3	Develop and conduct non-damaging mark-recapture studies to determine local population sizes and/or movement.	Not Started			Bishop Museum, U.S. Geological Survey, Biological Resources Division, To be determined, Pacific Islands Fish and Wildlife Office, USFWS	Research: Demographic Studies, Research: Genetics, Research: Habitat Status, Research: Taxonomic Studies	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	
Kauai cave wolf or pe'e pe'e maka 'ole spider (Adelocosa anops), Kauai cave amphipod (Spelaeorchestia koloana)	3	3.4	Determine the most beneficial and appropriate plants to be used for habitat enhancement.	Ongoing Current	FY 1995 - FY 1999		U.S. Geological Survey, Biological Resources Division, To be determined, Pacific Islands Fish and Wildlife Office, USFWS	Research: Habitat Requirements, Research: Habitat Status	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	
Kauai cave wolf or pe'e pe'e maka 'ole spider (Adelocosa anops), Kauai cave amphipod (Spelaeorchestia koloana)	3	3.6	Conduct studies to determine if manipulation of cave climate can be used to improve habitat for the endangered cave animals and/or control non-native species.	Ongoing Current	FY 1995 - FY 1999		To be determined, Pacific Islands Fish and Wildlife Office, USFWS	Research: Habitat Requirements, Research: Habitat Status, Research: Management Techniques	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	
Kauai cave wolf or pe'e pe'e maka 'ole spider (Adelocosa anops), Kauai cave amphipod (Spelaeorchestia koloana)	1	3.7	Conduct surveys for additional occupied habitat or restorable cave habitat.	Ongoing Current	FY 1995 - FY 1999		Hawaii Department of Land and Natural Resources, To be determined, Pacific Islands Fish and Wildlife Office, USFWS	Research: Demographic Studies, Research: Habitat Requirements, Research: Habitat Status, Research: Population Surveys, Research: Reintroduction	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	
Kauai cave wolf or pe'e pe'e maka 'ole spider (Adelocosa anops), Kauai cave amphipod (Spelaeorchestia koloana)	3	3.8	Conduct studies for the translocation of Kauai cave arthropods to unoccupied caves, implement as appropriate.	Not Started			Bishop Museum, To be determined, Pacific Islands Fish and Wildlife Office, USFWS	Research: Demographic Studies, Research: Genetics, Research: Other Information, Research: Population Surveys, Research: Reintroduction	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	
Kauai cave wolf or pe'e pe'e maka 'ole spider (Adelocosa anops), Kauai cave amphipod (Spelaeorchestia koloana)	3	4	Conduct public outreach to facilitate better public understanding of and support for conservation of the cave animals.	Not Started			To be determined, Pacific Islands Fish and Wildlife Office, USFWS	Management: Other	Contract, Graduate Student, Internal Administrative, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	

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Kauai cave wolf or pe'e pe'e maka 'ole spider (Adelocosa anops), Kauai cave amphipod (Spelaeorchestia koloana)	3	5	Validate recovery objectives.	Not Started			Pacific Islands Fish and Wildlife Office, USFWS	Management: General, Research: Management Techniques	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	
Kauai cave wolf or pe'e pe'e maka 'ole spider (Adelocosa anops), Kauai cave amphipod (Spelaeorchestia koloana)	3	6	Develop and implement a post-delisting monitoring plan as necessary.	Not Started			Pacific Islands Fish and Wildlife Office, USFWS	Management: Other	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	